REMARKS

This Application has been carefully reviewed in light of the Office Action mailed February 24, 2009 (the "*Office Action*"). At the time of the *Office Action*, Claims 1-7, 9-15, 17-23, 25-31, and 33 were pending in the Application and stand rejected In order to advance prosecution Applicants have amended Claim 17 and have added new Claims 34 and 35. No new matter has been added. For at least the reasons provided below, Applicants respectfully traverse the rejections and request reconsideration and favorable action in this case.

Section 112 Rejections

The *Office Action* rejects Claims 1-7, 9-15, 17-23, 25-31, and 33 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. More specifically, the *Office Action* contends "the disclosure does not describe how to 'compute' the 'hybrid path route' in such a way as to enable one skilled in the art to make and use the invention." *Office Action*, page 2. However, Applicants' specification describes how to compute a hybrid path with respect to some embodiments at least on page 10, line 26 to page 11, line 18 and page 13, line 28 to page 16 line 2. From this disclosure one of ordinary skill in the art would be able to compute a hybrid path route. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Section 101 Rejection

The *Office Action* rejects Claims 17-24 under 35 U.S.C. § 101 because the *Office Action* suggests that the claimed invention is directed to non-statutory subject matter. In particular the *Office Action* contends that "[i]t appears the logic as recited are executable instructions, therefore, they are software. Software or program per se is non-statutory subject matter." *Office Action*, page 3. As amended, Claim 17 recites that the logic is encoded in computer readable media and is executed by a processor. The inclusion of both computer readable media and a processor provides Claim 17 with the type of device discussed in *Bilski*. *See e.g., In re Bilski*, 545 F.3d 943, 965 (Fed. Cir. 2008). Thus, Claim 17 recites patentable subject matter and is not simply software, as suggested by the *Office Action*. Accordingly, for at least these reasons, Applicants respectfully request that this rejection be withdrawn.

Section 102 Rejection

The *Office Action* rejects Claims 1-2, 4-7, 9-10, 12-15, 17-18, 20-23, 25-26 and 28-31 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent Application Publication No. 2003/0117678 A1 filed by Chang et al. (*"Chang"*). Applicants respectfully traverse these rejections at least for the reasons discussed below.

A. Chang *Does Not Disclose Each Element of Claims 1, 9, 17, 25 and 33*

Claim 1 recites computing a hybrid path route for a selected label switched path (LSP) between a first node and a second node of the plurality of nodes, the hybrid path route comprising at least one IP link and at least one lightpath of a wavelength division multiplex (WDM) topology coupled to the IP network. This is not anticipated by *Chang*.

The *Office Action* contends that the above identified elements of Claim 1 are disclosed by FIG. 36A of *Chang*. *Office Action*, pages 4-5. The *Office Action* bases its contention on "the IP link between the IP nodes (routers) and . . . the WDM links with in 3625." *Office Action*, pages 4-5. Notwithstanding the fact that a high-level block diagram of the components of a network can not disclose the step of computing a hybrid path route, the detailed description of *Chang* only discusses routing with respect to wavelength division multiplex (WDM) components. *See e.g., Chang*, FIGS. 17-19, 28, 29, 31, and 36; and paragraphs [0155]-[0156], [0196], [0197], [0212] and [0224]. In other words, *Chang* does not disclose computing a hybrid path that includes an IP link and a light path.

The written description of *Chang* corresponding to FIG. 36A can be found under the heading "Secure Optical Layer Control Module." *Chang*, paragraph [0223]. Here, *Chang* indicates that the secure data network 3615 (the network comprising IP links) is coupled to the public optical network 3625 (the network comprising the WDM links). *Chang*, paragraph [0224]. Within this framework *Chang* only discloses determining routing within the optical network. The mere fact that the optical network disclosed by *Chang* is connected to, and sends/receives packets to/from, the IP network does not mean that *Chang* discloses computing a hybrid path route that includes an IP link and a lightpath of a WDM topology. *Chang* does not disclose computing a hybrid path route — it only discloses computing a route using optical links. More specifically, *Chang* discloses receiving a packet from an IP router, converting it into a suitable optical form and then routing it through all optical components

until it reaches its destination. *See e.g., Chang*, FIGS. 17-19, 28, 29, 31, and 36; and paragraphs [0155]-[0156], [0196], [0197], [0212] and [0224]. The following examples from *Chang* further illustrate that to the extent *Chang* discloses computing a route, the computed route is entirely within the optical network and thus not a hybrid path route.

The first example is found in paragraph [0113] where *Chang* discloses the routing protocol and the functions it performs. *Chang*, paragraph [0113]. "Each network element 121-125 in combination with NC&M 220 effects a routing protocol." *Chang*, paragraph [0113]. The network elements 121-125 use the routing protocol to "forward measured information to NC&M 220 for routing computations." *Chang*, paragraph [0113]. After calculating the routing tables NC&M 220 "disseminates the routing tables to each network element 121-125." *Chang*, paragraph [0113]. Upon receiving "a connection request from an IP router . . . information from the NC&M . . . [is] inputted in optical signaling header 210." *Chang*, paragraph [0113]. "Packets are [then] routed through network 200 using the information in signaling header 210." *Chang*, paragraph [0114]. As can be seen in this example, the information needed for routing is collected and distributed among network elements 121-125 which are optical components of optical network 200. *See e.g., Chang*, paragraph [0104] ("optical network 200" and "WDM network elements 121-125"). Therefore, the route that is determined by *Chang* is not a hybrid route path.

Another similar example is found in paragraph [0105] of *Chang*. In paragraph [0105] it is disclosed that "the overall path from source 123 to destination 122 includes paths 201 and 202 in cascade, both utilizing wavelength WP." *Chang*, paragraph [0105]. Here *Chang* clearly discloses the overall path comprising only optical path segments (paths 201 and 202).

Another example can be found at paragraph [0119] in which *Chang* states that "the global routing tables [are downloaded] to each of the elements" of the WDM backbone network 500. *Chang*, paragraph [0119]. Once again there is no mention of anything other than optical network components.

Yet another example is found with respect to FIG. 36A and the corresponding description in paragraph [0224]. "Module 3610 has the important function of maintaining information on the status of the network as a whole, that is, public optical network 3625." *Chang*, paragraph [0224]. This information includes "packet loss, throughput, and delay"

which may be used to "develop a database of links that are the 'best' links to use for any given transmission application." *Chang*, paragraph [0224]. *Chang* again clearly recites collecting information from optical networking components without discussing collecting such information from components other than those that are a part of optical network 3625. As is evident, *Chang* is only concerned with determining paths within the optical networks.

As another example, beginning at paragraph [0116] *Chang* provides a "Routing Example." *Chang*, paragraph [0116]. The provided routing example is for a "WDM circuit-switched backbone network." *Chang*, paragraph [0117].

Paragraph [0153] presents yet another example where it states that the introduction of two Plug-and-Play modules "brought optical label switching capability to the then existing circuit-switched network elements." *Chang*, paragraph [0153].

From the foregoing it can be seen that *Chang* discloses routing within an optical network. The mere fact that the optical network is coupled to IP routers does not disclose computing a hybrid path that includes both an IP link and a lightpath as required by Claim 1.

In response to similar arguments, the *Office Action* contends that "Chang clearly and specifically illustrated the figures that the nodes are IP nodes (IP routers) and therefore the links between the IP nodes are IP links." *Office Action*, page 7. Applicants do not contest that *Chang* discloses the existence of IP networks and WDM networks (or that IP networks generally include IP links). However, neither the figures nor the written description of *Chang* disclose computing a hybrid path route. The figures of *Chang* merely depict that the optical network is coupled to IP networks. The disclosure of *Chang* repeatedly discusses how routing may be performed within the optical network but never discusses routing outside the optical network (e.g., within the electrical network). Thus, any route computed by *Chang* is purely through optical components and therefore is not a hybrid path route.

The *Office Action* also contends that "Chang's network comprises a route comprising at least one IP link and at least one lightpath of a wavelength division multiplex (WDM) topology coupled to the IP network. Therefore, the route between the nodes in Chang's network clearly and undoubtedly reads the claimed 'hybrid path route'" *Office Action*, pages 7-8. However, Applicants again point out that *Chang* only discloses routing within the optical network. The mere fact that a packet may travel along IP links before or after being

routed through the optical network of *Chang* does not mean that *Chang* discloses computing a hybrid path route. The routes computed by *Chang* route a packet between IP networks, not through them. More specifically, *Chang* discloses receiving a packet from an IP router, converting it into a suitable optical form and then routing it through all optical components until it leaves the optical network. *See e.g.*, *Chang*, FIGS. 17-19, 28, 29, 31, and 36; and paragraphs [0155]-[0156], [0196], [0197], [0212] and [0224]. Thus, *Chang* does not disclose computing a hybrid path route for a selected label switched path (LSP) between a first node and a second node of the plurality of nodes, the hybrid path route comprising at least one IP link and at least one lightpath of a wavelength division multiplex (WDM) topology coupled to the IP network.

Accordingly, for at least these reasons, Applicants respectfully submit Claim 1 is allowable, as are all claims depending therefrom. For at least certain analogous reasons, Applicants respectfully submit that Claims 9, 17, 25 and 33 are allowable, as are all claims depending therefrom.

B. Chang *Does Not Disclose Each Element of Claims 4, 12, 20 and 28*

Claim 4 depends from Claim 1. For at least the reasons provided above with respect to Claim 1, Claim 4 is allowable. In addition, Claim 4 recites that determining whether performance of the hybrid path route for the selected LSP reduces costs comprises accounting for a cost associated with each IP link and each lightpath of the hybrid path route. The *Office Action* contends that this is disclosed in *Chang* paragraph [0105]. *Office Action*, page 5. As discussed above, *Chang* is only concerned with routing and costs associated with optical components. *See e.g. Chang*, Abstract, paragraphs [0099] and [0105]. More specifically, in paragraph [0105], relied on by the *Office Action*, *Chang* discloses "[e]ach destination is associated with a preferred path which would minimize 'the cost' —in FIG. 2, the overall path from source 123 to destination 122 includes paths 201 and 202 in cascade, both utilizing wavelength WP." *Chang*, paragraph [0105]. Thus, the only cost identified in paragraph [0105] of *Chang* is based on optical paths 201 and 202. Furthermore, all the information gathered and calculations performed by the routing protocol disclosed by *Chang* are done with, and distributed to, optical network elements 121-135. *See e.g., Chang*, paragraph [0113]. More specifically, *Chang* does not disclose the routing protocol measuring network

parameters for any of the links of the electrical layer comprising the IP routers 111 and 112. Thus, *Chang* does not disclose that determining whether performance of the hybrid path route for the selected LSP reduces costs comprises accounting for a cost associated with <u>each IP link and each lightpath</u> of the hybrid path route.

In response to similar arguments the *Office Action* contends that *Chang* inherently discloses the limitations of Claim 4. *Office Action*, pages 8-9. The *Office Action* contends that "*Chang* explicitly discloses that 'each destination is associated with a preferred path which would minimize the cost', and the cost 'is computed based on the total propagation distance, the number of hops, and the traffic load.'" *Office Action*, page 8. From this, the *Office Action* contends that "[i]t is clear that the reduction of the costs in *Chang* read the claimed limitation of reducing costs comprises 'accounting for a cost associated with each IP link and each lightpath of the hybrid path route.'" *Office Action*, page 8. The *Office Action* further contends that "because *Chang* discloses hybrid paths in the network, the reduction of the costs of *Chang* reads on the claimed limitation." *Office Action*, page 8.

With respect to inherency, the M.P.E.P. states that:

> To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'

M.P.E.P. § 2112 (quoting *In re Robertson*, 49 U.S.P.Q.2d 1949, 1150-51 (Fed. Cir. 1999)). As discussed above, *Chang*, at best, only discloses a cost associated with optical links. Furthermore, as discussed above, *Chang* only discloses routing within an optical network. *See e.g.*, *Chang*, paragraph [0105] ("overall path from source 123 to destination 122" is only through optical network 200). Because *Chang* only discloses costs associated with optical links and because any route computation is limited to components within the optical network, it <u>can not</u> be said that *Chang* <u>necessarily includes</u> accounting for the cost associated with an IP link as required for a rejection based on inherency.

The *Office Action* further contends that "the IP link is associated with the hybrid path route, therefore, Chang only 'discloses routing within an optical network', Chang still reads the claim with its broadest reasonable interpretation." *Office Action*, page 9. Claim 4 clearly

recites "accounting for a cost associated with each IP link" while *Chang* clearly discloses "a preferred path which would minimize 'the cost'—in FIG. 2, the overall path from 123 to destination 122" where 123 and 122 are optical network elements. *Chang* paragraph [0105]; *see also* paragraph [0104]. There is no indication in *Chang* that the cost associated with an IP link is considered.

Thus, *Chang* does not inherently disclose that determining whether performance of the hybrid path route for the selected LSP reduces costs comprises accounting for a cost associated with each IP link and each lightpath of the hybrid path route. Therefore, for at least this additional reason Applicants respectfully submit that Claim 4 is allowable. For at least certain analogous reasons, Applicants submit that Claims 12, 20 and 28 are allowable.

Section 103 Rejection

The *Office Action* rejects Claims 3, 11, 19, 27 and 33 under 35 U.S.C. § 103(a) as being unpatentable over *Chang* in view of U.S. Patent No. 6,882,627 issued to Pieda et al. ("*Pieda*"). Applicants respectfully traverse these rejections at least for the reasons discussed below.

The proposed combination of *Chang* and *Pieda* fails to disclose, teach or suggest each element of Claims 3, 11, 19, 27 and 33. For example, Claim 3 recites receiving a transformed topology constructed by an optical transport service provider of the WDM topology, the transformed topology comprising a subset of available lightpaths of the WDM topology. This is not disclosed, taught or suggested by the combination of *Chang* and *Pieda*.

The *Office Action* concedes that *Chang* does not "disclose using a transformed topology to calculate the hybrid path." *Office Action*, page 6. The *Office Action* then contends that "Pieda discloses to calculate a path using a transformed topology (fig. 3C)." *Office Action*, page 6. However, Claim 3 does not merely recite receiving a transformed topology, but rather a transformed topology comprising a <u>subset of available lightpaths</u> of the WDM topology. This is not disclosed by *Pieda*.

Pieda discloses that "FIG. 3C shows the network of FIG. 3A after the SRCGs 50, 52 identified in FIG. 3B have been transformed." *Pieda*, column 7, lines 40-42. Looking at FIGS. 3A-3C there is the same number of links in all three topologies. *Pieda*, FIGS. 3A-3C. Furthermore, *Pieda* discloses that the "transformation preferably involves transforming the

link requiring transformation into a forward unidirectional link and a reverse unidirectional link each having a respective cost." *Pieda*, column 2, lines 45-49. There is nothing in *Pieda* which discloses, teaches or suggests that the transformed topology is a subset of available lightpaths of the WDM topology. If anything, the transformation disclosed by *Pieda* creates additional links.

Therefore, for at least this additional reason Applicants respectfully submit that Claim 3 is allowable. For at least certain analogous reasons, Applicants submit that Claims 11, 19 and 27 are allowable.

New Claims

Claims 34 and 35 depend from Claim 1. For at least the reasons provided above with respect to Claim 1, Claims 34 and 35 are allowable. In addition, Claim 34 recites the at least one IP link and the at least one lightpath of the WDM topology are operated by different service providers. Nowhere does *Chang* disclose, teach, or suggest that the at least one lightpath of the WDM topology are operated by different service providers. Claim 35 recites computing a hybrid path route comprising at least one non-lightpath link and at least one lightpath of a WDM topology coupled to the IP network. Nowhere does *Chang* disclose, teach or suggest computing a hybrid path route comprising at least one non-lightpath link and at least one lightpath of a WDM topology. Accordingly, for at least these reasons Applicants respectfully request Claims 34 and 35 be allowed.

No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the references cited by the *Office Action*. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a future Response or on Appeal, if appropriate. By not responding to additional statements made by the *Office Action*, Applicants do not acquiesce to the *Office Action*'s additional statements. The example distinctions discussed by Applicants are sufficient to overcome the *Office Action*'s rejections.
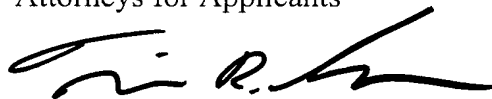
CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If there are matters that can be discussed by telephone to further the prosecution of this Application, Applicants invite the Examiner to call the undersigned attorney at (214) 953-6931 at the Examiner's convenience.

Applicants believe no fee is due, but to the extent necessary, any additional required fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicants

Timothy R. Gerlach
Reg. No. 57,548
Tel. (214) 953-6931

Date: 5 -21- 09

Customer Number: **05073**